REMARKS/ARGUMENTS

Claims 1-15, 17-18 and 22-32 are active. Claims 5 and 10 are withdrawn. Applicants note the Examiner's comments regarding these claims (Official Action dated January 6, 2009, page 2, lines 3-5) and respectfully request rejoinder of these claims which depend directly or indirectly from Claim 1, upon allowance of this application.

The claimed invention provides a cosmetic preparation of a cationic polymer especially useful for hair cosmetic formulations which is clear in appearance, provides a strong hold for elastic hairstyles in humid atmospheric conditions, and provides good feel to the hair, especially in terms of ease of combing and detangling.

According to the claimed invention, the water content in the reaction mixture during the polymerization is less than 20 % by weight. Applicants have described the water content of the polymerization as follows:

> "Here, the content of water in the reaction mixture during the polymerization is less than 20% by weight, preferably less than 15%, particularly preferably less than 10% by weight, especially preferably less than 5% by weight. Preference is given here to working under essentially anhydrous conditions and carrying out a bulk polymerization. In this connection, "essentially anhydrous" means that, apart from the water present in the starting materials, no additional water is introduced into the reaction mixture." (Page 29, lines 8-16)

Applicants wish to thank Examiner Silverman for withdrawal of the rejection of Claims 1-4, 6-9, 11-17, 22-29 and 32 under 35 U.S.C. 102(b) over JP 2001-181354.

The rejection of Claims 1-4, 6-9, 11-18, 22, 24-29, 31 and 32 under 35 U.S.C. 103(a) over Hosoda et al. (U.S. 4,380,600) is respectfully traversed.

Hosoda describes an aqueous dispersion of a polymer obtained by polymerizing a water soluble ethylenically unsaturated monomer (a) in an aqueous solution

of a water soluble polymer (b). The water soluble polymer (b) is described as containing an ether, hydroxyl or carboxyl group (Col. 5, lines 54-62) and preferred polymers are polyethylene glycol, polyethylene oxide, polyvinyl alcohol, ethylene glycol/propylene glycol copolymer and poly propylene glycol (Col. 5, lines 63-65). Polyethylene glycol, polyvinyl alcohol and polyvinylpyrrolidone are described in the examples.

Applicants have previously shown that Hosoda describes that a minimum per cent water in the composition during polymerization of (a) is 25 % by weight (Response to Official Action dated August 29, 2008, page 24, lines 7-10, filed November 17, 2008).

The Office has provided a calculation of the potential range of water content in the Hosoda polymerization (Official Action dated January 6, 2009, pages 3 and 4) and concluded that if the polymerization mixture contained salt at the maximum solubility level and organic solvent at 50% based on the water amount, a minimum amount of water would be "just less than 20%."

Applicants respectfully direct the Examiner's attention to the description of Hosoda at Col. 7, lines 46-51, which states:

> The presence of the organic solvent in the polymerization step is likely to induce chain transfer in the polymerization reaction and to lower the degree of polymerization of the resulting polymer. It is suitable therefore to **add the organic solvent after the end of the polymerization reaction.** (Bold added)

In addition, Applicants would remind the Examiner that the solubility of organic solutes such as water soluble polymers decreases when water is saturated with a salt such as sodium chloride as assumed in the calculations referenced above. Hosoda has stated at Col. 6, lines 13-19:

> On the other hand, if the amount [of polymer (b)] exceeds 150 parts by weight, it is difficult to dissolve the polymer (b) in water. Furthermore, since the polymer (b) itself has a high viscosity in water, the viscosity of the final aqueous dispersion of the polymer is excessively high, and the desired flowability and stability will not be obtained.

Applicants therefore respectfully submit that Hosoda does not inherently disclose or suggest polymerization in less than 20% water as the Office alleges and the calculations made by the Examiner are not supported by the Hosoda disclosure as described above. The examples provided in the cited reference describe water concentrations of 30% or more. Applicants respectfully point out that Hosoda provides 46 examples. Only two of these examples (12 and 25) describe a water content less than 50%. Both contain 33% water which is much higher than the water content according to the claimed invention. Moreover, the average water content of the 46 examples is about 63%. Accordingly, Applicants respectfully submit that Hosoda would not have provided motivation to one of ordinary skill in the art, at the time of the invention, to use a water content as described in the claimed invention.

Applicants have suggested the importance of the reduced water content according to the claimed invention as follows:

> "In the preparation of the polymers used according to the invention, grafting onto the polyether-containing compounds (b) may occur during the polymerization, which may lead to the advantageous properties of the polymers. Depending on the degree of grafting, the polymers used according to the invention are to be understood as meaning either pure graft polymers or mixtures of the abovementioned graft polymers with nongrafted polyether-containing compounds and homo- or copolymers of the monomers (a1) and optionally (a2), (c) and (d). In this connection, the polymers according to the invention are markedly superior with regard to their properties to mixtures in which the polymerization is realized in the presence of relatively large amounts of water (see comparative experiment 1) or in which the polyether component is only added after the polymerization of the monomers (see comparative experiment 2). However, mechanisms other than grafting are also conceivable which can bring about these changed advantageous properties." (page 7, lines 26-42)

Moreover, Applicants have shown significant improvement in cosmetic hair treatment performance in terms of reduction in combing force in the following Table (page 46) which is reproduced again for the Examiner's convenience.

	Example 1	Compari-son 1	Compari-son 2a	Compari-son 2b	Compari-son 3
Solids content (% by wt.)	60.2	49.8	10.8	60.8	37.2
Combing force decrease wet (%) (Europ. hair)	44	23	15	18	28
Combing force decrease dry (%) (Asiat. hair)	86	77	ND	ND	79
Surfactant solution 0.5% active ingredient	clear	clear	slightly cloudy	clear	clear
K value 1% in ethanol	15.1				

ND: Not determined since combing force decrease wet insufficient (<20%)

In Comparative Example 1, the cationic polymer of the inventive example 1 was prepared in a polymerization mixture having a water content of 50 % by weight. Comparative Example 2b is simply a physical mixture of a cationic polymer of the same monomer composition which is physically mixed with the polyether compound after polymerization is complete.

The composition according to the claimed invention shows a significant reduction in combing force for both wet and dry hair in comparison to the comparative examples. Such improvement is neither disclosed nor suggested by Hosoda.

Applicants note the Office's comments (Official Action dated January 6, 2009, page 5, lines 15-20) that "no conclusions can be drawn" because of differences in concentration. However, Applicants point out that in the testing as described on page 43, line 21, 0.5% polymer solids were used in the testing formulations and therefore the amounts are the same and the results are directly comparable. Therefore, contrary to the Examiner's assertion

(Official Action dated January 6, 2009, page 6, lines 5-8) a nexus between water concentration during polymerization does exist and Applicants respectfully submit that the showing of the specification does indicate significant improvement in performance due to the composition according to the claimed invention.

> A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. (*In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367)

In view of all the above, Applicants respectfully submit that the cited reference can neither anticipate nor render the claimed invention obvious, and withdrawal of the rejection of Claims 1-4, 6-9, 11-18, 22, 24-29, 31 and 32 under 35 U.S.C. 103(a) over Hosoda is respectfully requested.

Applicants respectfully submit that the above identified application is now in condition for allowance and early notice of such action is earnestly solicited.

Respectfully submitted,

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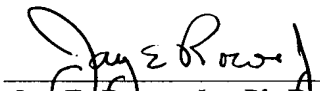

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